

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S369	2073	(hydrophobically adj modified) with (polymer or guar or cellulose)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2006/09/15 13:14
S370	550	S369 and (cross\$linking adj agent)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2006/09/15 13:14
S371	209	S370 and ((anionic or cationic or ionic) adj surfactant)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2006/09/15 13:15

* * * * * Welcome to STN International * * * * *

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America
NEWS 2 "Ask CAS" for self-help around the clock
NEWS 3 FEB 27 New STN AnaVist pricing effective March 1, 2006
NEWS 4 MAY 10 CA/CAPLUS enhanced with 1900-1906 U.S. patent records
NEWS 5 MAY 11 KOREAPAT updates resume
NEWS 6 MAY 19 Derwent World Patents Index to be reloaded and enhanced
NEWS 7 MAY 30 IPC 8 Rolled-up Core codes added to CA/CAPLUS and
USPATFULL/USPAT2
NEWS 8 MAY 30 The F-Term thesaurus is now available in CA/CAPLUS
NEWS 9 JUN 02 The first reclassification of IPC codes now complete in
INPADOC
NEWS 10 JUN 26 TULSA/TULSA2 reloaded and enhanced with new search and
and display fields
NEWS 11 JUN 28 Price changes in full-text patent databases EPFULL and PCTFULL
NEWS 12 JUL 11 CHEMSAFE reloaded and enhanced
NEWS 13 JUL 14 FSTA enhanced with Japanese patents
NEWS 14 JUL 19 Coverage of Research Disclosure reinstated in DWPI
NEWS 15 AUG 09 INSPEC enhanced with 1898-1968 archive
NEWS 16 AUG 28 ADISCTI Reloaded and Enhanced
NEWS 17 AUG 30 CA(SM)/CAPLUS(SM) Austrian patent law changes
NEWS 18 SEP 11 CA/CAPLUS enhanced with more pre-1907 records

NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.

NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS LOGIN Welcome Banner and News Items
NEWS IPC8 For general information regarding STN implementation of IPC 8
NEWS X25 X.25 communication option no longer available

Enter NEWS followed by the item number or name to see news on that specific topic.

All use of STN is subject to the provisions of the STN Customer agreement. Please note that this agreement limits use to scientific research. Use for software development or design or implementation of commercial gateways or other similar uses is prohibited and may result in loss of user privileges and other penalties.

* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 11:28:47 ON 15 SEP 2006

=>

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'CAPLUS' ENTERED AT 11:29:04 ON 15 SEP 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the

American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 15 Sep 2006 VOL 145 ISS 13
FILE LAST UPDATED: 14 Sep 2006 (20060914/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

```
=> s (hydrophobically modified) and polymer and (crosslinking or cross-linking)
    3111 HYDROPHOBICALLY
    559893 MODIFIED
    1926 HYDROPHOBICALLY MODIFIED
        (HYDROPHOBICALLY (W) MODIFIED)
    1085266 POLYMER
    194593 CROSSLINKING
    499155 CROSS
    43399 LINKING
    13605 CROSS-LINKING
        (CROSS (W) LINKING)
L1      52 (HYDROPHOBICALLY MODIFIED) AND POLYMER AND (CROSSLINKING OR
        CROSS-LINKING)
```

```
=> s l1 and (anionic or cationic or ionic) surfactant
MISSING OPERATOR IONIC) SURFACTANT
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.
```

```
=> s l1 and (anionic or cationic or ionic) w surfactant
MISSING OPERATOR IONIC) W SURFACTANT
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.
```

```
=> s l1 and surfactant
    183524 SURFACTANT
L2      22 L1 AND SURFACTANT
```

```
=> s l1 and anionic surfactant
    117074 ANIONIC
    183524 SURFACTANT
    15112 ANIONIC SURFACTANT
        (ANIONIC (W) SURFACTANT)
L3      3 L1 AND ANIONIC SURFACTANT
```

```
=> s l1 and cationic surfactant
    129969 CATIONIC
    183524 SURFACTANT
    10304 CATIONIC SURFACTANT
        (CATIONIC (W) SURFACTANT)
L4      2 L1 AND CATIONIC SURFACTANT
```

```
=> s l1 and ionic surfactant
    268528 IONIC
    183524 SURFACTANT
    4057 IONIC SURFACTANT
        (IONIC (W) SURFACTANT)
L5      4 L1 AND IONIC SURFACTANT
```

```
=> s l3 or l4 or l5
L6      8 L3 OR L4 OR L5
```

=> d 16 1-8

L6 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:954172 CAPLUS
DN 142:94577
TI Hydrogels in aqueous phases of polyvinylalcohol (PVA), surfactants and clay minerals
AU Liu, Jing; Hoffmann, H.
CS Physical Chemistry I, University of Bayreuth, Bayreuth, 95440, Germany
SO Colloid and Polymer Science (2004), 283(1), 24-32
CODEN: CPMSB6; ISSN: 0303-402X
PB Springer GmbH
DT Journal
LA English
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:705832 CAPLUS
DN 140:111938
TI Rheology and binding studies in aqueous systems of hydrophobically modified acrylamide and acrylic acid copolymers and surfactants
AU Li, Yan; Kwak, Jan C. T.
CS Department of Chemistry, Dalhousie University, Halifax, NS, B3H 4J3, Can.
SO Colloids and Surfaces, A: Physicochemical and Engineering Aspects (2003), 225(1-3), 169-180
CODEN: CPEAEH; ISSN: 0927-7757
PB Elsevier Science B.V.
DT Journal
LA English
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:391008 CAPLUS
DN 135:123101
TI Simple Gel Swelling Experiments Distinguish between Associating and Nonassociating Polymer-Surfactant Pairs
AU Sjoestroem, Jesper; Piculell, Lennart
CS Physical Chemistry 1 Center for Chemistry and Chemical Engineering, Lund University, Lund, S-221 00, Swed.
SO Langmuir (2001), 17(13), 3836-3843
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English
RE.CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:587037 CAPLUS
DN 129:291267
TI Responsive Polymer Gels Based on Hydrophobically Modified Cellulose Ethers and Their Interactions with Ionic Surfactants
AU Rosen, Olof; Sjoestroem, Jesper; Piculell, Lennart
CS Physical Chemistry 1, Center for Chemistry and Chemical Engineering Lund University, Lund, S-221 00, Swed.
SO Langmuir (1998), 14(20), 5795-5801
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1996:568912 CAPLUS
DN 125:225103
TI Surfactant binding and micellization in polymer solutions and
gels: binding isotherms and their consequences
AU Piculell, Lennart; Thuresson, Krister; Ericsson, Olof
CS Physical Chemistry 1, Lund University, Lund, 2-221 00, Swed.
SO Faraday Discussions (1995), 101(Gels), 307-318
CODEN: FDISE6; ISSN: 0301-7249
PB Royal Society of Chemistry
DT Journal
LA English

L6 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:920067 CAPLUS
TI Self-assembly and segregation in mixed polymer-surfactant
solutions.
AU Lindman, Bjoern; Piculell, Lennart; Thuresson, Krister; Olsson, Ulf
CS Chemical Center, Lund University, Lund, S-221 00, Swed.
SO Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24
(1995), Issue Pt. 1, COLL-028 Publisher: American Chemical Society,
Washington, D. C.
CODEN: 61XGAC
DT Conference; Meeting Abstract
LA English

L6 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:559748 CAPLUS
DN 121:159748
TI Mixed Micelles Formed by Cationic Surfactants and Anionic
Hydrophobically Modified Polyelectrolytes
AU Magny, Benoit; Iliopoulos, Ilias; Zana, Raoul; Audebert, Roland
CS Laboratoire de Physico-Chimie Macromoleculaire, Universite Pierre et
Marie Curie, Paris, 75231, Fr.
SO Langmuir (1994), 10(9), 3180-7
CODEN: LANGD5; ISSN: 0743-7463
DT Journal
LA English

L6 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:412011 CAPLUS
DN 121:12011
TI Rheological study of polymer-surfactant interactions in
cellulose derivatives and gelatin aqueous solution
AU Pisarcik, M.; Bakos, D.
CS Dep. Print. Technol. Appl. Photochem., Slovak Tech. Univ., Bratislava,
SK-81237, Slovakia
SO Acta Polymerica (1994), 45(2), 93-6
CODEN: ACPODY; ISSN: 0323-7648
DT Journal
LA English

=> d 16 1-8 abs

L6 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AB Aqueous solns. of synthetic clay minerals were studied in the presence of
surfactants and water-soluble poly(vinyl alc.) (PVA). The PVAs had a mol.
weight of about 105 Dalton and a degree of hydrolysis of 82. The PVA-samples
were surface active and lowered the surface tension to 43 mN/m. As a
consequence of their amphiphilic nature the PVA mols. bind strongly to

clay mineral particles. On saturation the clay mineral particles adsorb the fivefold weight of PVA of their own weight. It is concluded that the thickness of the adsorbed layers on both sides of the clay mineral is in the range of the hydrodynamic diameter of the PVA-coils in the bulk phase. When the clay mineral particles are not saturated with PVA, they act as crosslinking agents for the PVA. The whole systems are phys. cross-linked and assume gel-like properties. Rheol. measurements show that samples behave like soft matter with a yield stress value. All of them have a frequency independent storage modulus which is an order of magnitude larger than the loss modulus. The hydrogels become stronger as PVA concentration increases. Small amts. of cationic surfactants bind on the clay mineral. The interface of the clay mineral becomes more hydrophobic and the binding of the PVA on the clay mineral is strengthened. With rising concentration of the surfactant the surfactant mols. bind on PVA and the PVA becomes hydrophilic. As a consequence the PVA can no longer bind on the clay mineral and the gels transform to viscous and turbid solns. Small amts. of cationic surfactants therefore stiffen the hydrogels while larger amts. cause phase separation and a solution with low viscosity. Anionic surfactants like SDS do not bind on the clay mineral, but strongly on the PVA. With increasing SDS concentration, the hydrogels become stiffer at first but thereafter they break and transform to viscous fluids. In PVA-solns. without the clay minerals both cationic and anionic surfactants bind to the PVAs in the aqueous solution. With increasing concentration of surfactant,

the

viscosities of the solns. pass over a maximum. In this respect the PVAs behave like hydrophobically modified water soluble polymers. The surfactants bind to the hydrophobic microdomain and thereby crosslink the polymer mols. On saturation the poly(vinyl alc.) with anionic surfactant become hydrophilic and the network character disappears to a certain extent.

L6 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AB Viscosity data are reported for aqueous solns. of a series of acrylamide-based co- and terpolymers with added surfactants. Polymer composition is systematically varied through ionic content (acrylic acid monomer content and solution pH) and hydrophobicity (alkylacrylamide content and alkyl chain length). Surfactants used were sodium dodecylsulfate (SDS), diethylhexyl sulfosuccinate (AOT), dodecyltrimethyl ammoniumbromide (DTAB) and nonionic surfactants. For the anionic surfactant SDS, a surfactant selective electrode was used to obtain binding isotherms of SDS with the polymers. The expts. show that in the presence of anionic surfactants, the solns. exhibit a dramatic increase in solution viscosity at concns. around the surfactant CMC, attributed to interpolymer crosslinking through the formation of mixed micelles involving the hydrophobes from different polymer chains and the surfactant mols. The viscosity enhancement increased with increasing hydrophobicity of the hydrophobe and decreased with increasing AA incorporation in the polymer. The ionic fraction of the polymer chain (AA) also plays an important role in unfolding the polymer chain through electrostatic repulsion contributing to the viscosity increases at high solution pH. Both rheol. and EMF-derived binding isotherms suggest that the viscosity maximum occurs at a low ratio of bound surfactant and hydrophobe monomers of approx. two surfactant mols. per hydrophobe.

L6 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AB Simple expts., based on volume changes of crosslinked polymer gels immersed in surfactant solns., can be used to distinguish between associating and nonassocg. nonionic polymer/ionic surfactant pairs. For an associating pair, the cooperative binding of the surfactant at the critical association concentration gives rise to a significant

increase in the gel volume. Gels based on hydroxyethyl cellulose (HEC), Natrosol 250 GR and Natrosol Plus grade 330 CS and cationic hydrophobically modified HEC (cat-HMHEC, the chloride

salt of an N,N-dimethyl-N-dodecyl derivate of hydroxyethyl cellulose) Quatrisoft LM200, were studied in this manner. Alkyl sulfate surfactants bind to HEC, but only for tail lengths longer than 8 carbons. No binding is found for cationic surfactants. All tested surfactants bind to hydrophobically modified HEC, but the extent of gel swelling (and, presumably, surfactant binding) is much larger for those surfactants that also bind to nonmodified HEC. The effect of added salt on swelling equilibrium was studied and transient volume changes as the gels approach swelling equilibrium were analyzed in detail.

L6 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AB Responsive gels made by chemical crosslinking 2 modified cellulose ethers, sep. and in mixts., were investigated with respect to their swelling in aqueous solns. containing anionic or cationic surfactants and/or added

salt. One of the polymers (cathM-HEC) is a salt-sensitive and strongly hydrophobically associating (hydroxyethyl)cellulose modified with cationic hydrophobic side chains. The other polymer, Et hydroxyethyl cellulose (EHEC), is a temperature-sensitive, weakly self-associating polymer. Both polymers bind ionic surfactants, and the response of the crosslinked gels to the content of surfactant or salt in the swelling medium reflected the expected surfactant binding isotherms. A maximum in swelling was generally observed when the surfactant concentration

in the

swelling medium was close to the critical micelle concentration (cmc). The collapse/swelling behavior of pure cathM-HEC gels on addition of cationic and anionic surfactants showed a close correspondence to the previously studied phase behavior of noncrosslinked cathM-HEC in mixts. with the same surfactants. Mixed gels of EHEC and cathM-HEC in different proportions showed a behavior intermediate between those of the pure polymer gels. It was thus possible to customize gels with respect to their responses to different influences.

L6 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AB Transient networks are formed by many pairs of polymer and surfactant that associate into mixed micelles. Generally, for a given polymer concentration, the viscosity or the elastic shear modulus of such mixts. first increases and then decreases with the concentration of added surfactant. We point to the importance of considering the general features of the isotherm for the binding of the surfactant to the polymer when analyzing these effects. We argue that a break-down of mixed micellar crosslinks between polymers should typically occur only when the added surfactant dominates in the mixed micelles. At this point, the concentration of monomeric surfactant should be of the same order as the relevant c.m.c. of the surfactant. The relevant c.m.c. is not generally the bulk c.m.c but, rather, the c.m.c. in the same system but in the absence of those hydrophobic parts of the polymer that are responsible for the interpolymer crosslinking. We use this approach to analyze new and previously published exptl. data on a range of ionic and nonionic hydrophobically modified polymers mixed with surfactants that form spherical micelles, but have widely different c.m.c.s. A consistent picture of the mixed micellar stoichiometries at the point of the maximum viscosity, and at the point of final dissoln. of the mixed micellar crosslinks, emerges from this anal.

L6 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AB In mixed solns. of a surfactant and a polymer, there may be a polymer-induced micellisation, a binding of surfactant to the polymer, or a combination of these phenomena. Polymer-surfactant interactions may be attractive or repulsive, which may lead to association and segregation, resp. Based on such concepts, systems of homopolymers and graft copolymers, notably so-called hydrophobically modified polymers, are analyzed. In particular we consider surfactant binding isotherms, crosslinking

of polymer chains by surfactant micelles, micelle diffusion in a polymer network and phase equilibrium Gels, observed for certain polymer-surfactant systems, including combinations of a polyelectrolyte and an oppositely charged ionic surfactant and of a nonionic polymer and an ionic surfactant, are discussed on the basis of phase equilibrium and polymer-induced surfactant self-assembly.

L6 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AB The association between the cationic surfactant dodecyltrimethylammonium chloride and amidated Na polyacrylate is investigated by rheol. and by both steady-state and time-resolved fluorescence. The polymers contain 1 or 3 mol % alkyl side groups (dodecyl or octadecyl). The strength of the interaction is improved when the polymer hydrophobicity increases. In the presence of modified polymer, mixed micelles are formed containing surfactants and polymer alkyl groups. Depending on the polymer and surfactant concns., the mixed micelles contain alkyl groups belonging to one or more polymer chains. In the latter case, crosslinking between polymer chains occurs, leading to the viscosification or gelation of the system. Steady-state and time-resolved fluorescence methods are used to estimate the aggregation number

of the mixed micelles. The total number of surfactant mols. and alkyl groups in the mixed micelles is close to the aggregation number of the free surfactant micelles. From the above results the number of alkyl groups in the mixed micelles is derived and correlated to the rheol. behavior of these systems. The importance of inter- and intrachain contributions to the formation of the mixed micelles is discussed.

L6 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AB The rheol. properties of water-soluble cellulose derivs. (hydroxypropyl cellulose, modified hydroxyethyl cellulose) and gelatin aqueous solns. in a system with ionic surfactant were studied. The maximum viscosity was found in the region of critical micelle concentration (CMC) of

the surfactant, as a result of micelle formation. An increase of the CMC value with increasing mol. weight was observed, and a decrease of this value

for the hydrophobically modified polymer solution was found, compared to the CMC value of the surfactant aqueous solution A slight

viscosity maximum was also found in gelatin systems with cationic and anionic surfactants. The viscosity increase (crosslinking) of gelatin aqueous solns. was more affected by a cationic surfactant than by an anionic one. PH measurements on gelatin systems indicated that the min. viscosity was reached in the region of the isoelec. point.